

A NEW SPECIES OF *GLYPHIDOCERA* WALSINGHAM
FROM SOUTHWESTERN OHIO (LEPIDOPTERA:
GELECHIOIDEA: GLYPHIDOCERIDAE)

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Abstract.—*Glyphidocera wrightorum*, new species, is described and illustrated from Huffman Prairie in Southwestern Ohio, USA. Huffman Prairie is a 109-acre prairie on Wright-Patterson Air Force Base.

Key Words: Glyphidoceridae, natural resources, national historic site

Species of *Glyphidocera* are small to medium-sized brownish moths. The genus is restricted to the New World, with its greatest species diversity in the Neotropics. Unpublished studies by the first author indicate that Neotropical species (described and undescribed) outnumber temperate species by nearly 10:1, with about 100 total species in the genus. Larval hosts are unknown except for *Glyphidocera juniperella* Adamski and Brown (1987), which feeds on *Juniperus horizontalis* Moench (Cupressaceae) (Adamski and Brown 1987).

The type-species of *Glyphidocera*, *G. audax* Walsingham, was described from St. Vincent Island (Walsingham 1892) and placed in the Gelechiidae. The genus remained in Gelechiidae until Hodges (1978) transferred it and several other genera with perplexing characters, to Symmocinae within Blastobasidae. More recently, Hodges (1998) transferred Symmocinae to Autostichidae, except for *Glyphidocera*, which he elevated to Glyphidoceridae, based on two parallelisms: 1) forewing with CuA_1 and CuA_2 stalked and downcurved from posterodistal angle of cell, and 2) forewing with R_s terminating on the outer margin.

Glyphidoceridae can be recognized usually by some combination of the following characters: male with valva narrowed basally, abruptly broadened distally, apex protracted; valval costa usually with fingerlike projection at base; gnathos projecting dorsally from beneath tuba analis; aedeagus curved, with medium to large cornutus; female with ductus bursae sclerotized and apically expanded, spiralled from posterior end of corpus bursae; corpus bursae with patches of denticles at the anterior and posterior ends, and with a sclerotized plate near constricted end of ductus bursae.

The study of Lepidoptera at Huffman Prairie was initiated in 1992 by the Ohio Chapter of The Nature Conservancy under joint agreement with the Department of Defense and the Wright-Patterson Air Force Base Office of Environmental Management. The first report of the study (Metzler and Zebold 1995) listed 28 species of moths collected at Huffman Prairie as new records from Ohio. This paper is the second of several reports that will be based on the ongoing research on the Lepidoptera at Huffman Prairie.



Fig. 1. Huffman Prairie in southwestern Ohio, a National Historic Landmark and State of Ohio Natural Landmark.

MATERIALS AND METHODS

Study site.—Huffman Prairie is a tract of 109 acres (Nolin and Runkle 1985, Nolin and Mutter 1988), of which 78 acres are an Ohio registered Natural Landmark (Anonymous 1986). The tract lies at the end of one of the main runways, and thus has not been developed. Pioneer surveyor, Israel Ludlow, described the site in 1802 as “wet, boggy prairie” and “dry, grassy prairie.” The prairie was substantially drained; the dry prairie is represented by Huffman Prairie as represented in Fig. 1. Historical and contemporary data show that the prairie harbors several species of animals and plants that are prairie remnants in Ohio, such as *Tarachidia binocula* (Grote) and *Luperina stipata* (Morrison) (Noctuidae), *Eucosma heathiana* Kearfott (Tortricidae), *Andropogon gerardii* Vitman and *Sorghastrum nutans* (L.) (Poaceae), and *Heliopsis helianthoides* (L.) and *Ratibida pinnata* (Vent.) (Asteraceae).

Orville and Wilbur Wright used the prairie, owned by their banker, Torrence Huffman, as a practice flying field and school for pilots. Here, the Wright brothers constructed several hangars for storage of their aircraft and catapults for launching their aircraft for flight testing.

Methods.—Kornerup and Wanscher (1978) is used as a color standard for the description of the adult vestiture. Genitalia were dissected as described by Clarke (1941), except mercurochrome and chlorazol black were used as stains. Pinned specimens and genital preparations were examined with dissecting and compound microscopes. Measurements of wings and genitalia were made using a calibrated ocular micrometer.

Glyphidocera wrightorum
Adamski and Metzler, new species
 (Figs. 2–5)

Diagnosis.—Male gnathos with a narrow, dorsally extended projection, costa of valva



Fig. 2. Holotype of *Glyphidocera wrightorum*.

sclerotized along basal half; costa spinose, aedeagus with an elongate cornutus; female corpus bursae with a posterior lobe, lobe with an internal sclerotization.

Description.—**Head:** Vertex with brown scales, intermixed with pale-yellow scales and few brown scales tipped with pale yellow; antenna brown above, pale yellow beneath; labial palpus with outer surface mostly brown, intermixed with pale-yellow scales; area near apices of terminal segments mostly pale yellow; inner surface pattern as above, but with more pale-yellow scales; proboscis pale yellow basally, pale yellow and brown distally.

Thorax: Tegula and mesoscutum mostly with brown scales, intermixed with brown scales tipped with pale yellow and few pale yellow scales; outersurface of legs mostly brown with pale yellow scales near midtibia and near apices of all segments and tarsomeres or mostly pale yellow, intermixed with brown scales and patterned as above; innersurface mostly pale yellow, intermixed with few brown scales; forewing (Figs. 2–

3), length 5.5–6.7 mm ($n = 11$), upper surface mostly brown, intermixed with pale-yellow scales; area of cell paler than outer parts of the wing; cell with two brown spots, one central and one distal (spots are absent in rubbed specimens); undersurface brownish gray; venation (Fig. 3) cubitus 4-branched; M_1 absent, M_2 and M_3 approximate basally, CuA_1 and CuA_2 stalked beyond cell; hindwing pale gray; venation (Fig. 3) R_s and M_1 stalked beyond cell; cubitus 4-branched; M_2 closer to M_3 than to M_1 ; M_3 arched, stalked with CuA_1 beyond cell; CuA_2 arising from beyond midcell.

Abdomen: Upper surface pale brownish gray, undersurface mostly pale yellow, intermixed with brownish-gray scales and few brown scales.

Male genitalia (Fig. 4): Uncus elongate, depressed dorsoventrally, slightly keeled ventrally; gnathos with a narrow projection, dorsally curved beyond anal opening, basally setose; valva somewhat widened basally, narrowed distally to a setose lobe; costa of valva sclerotized along basal half,

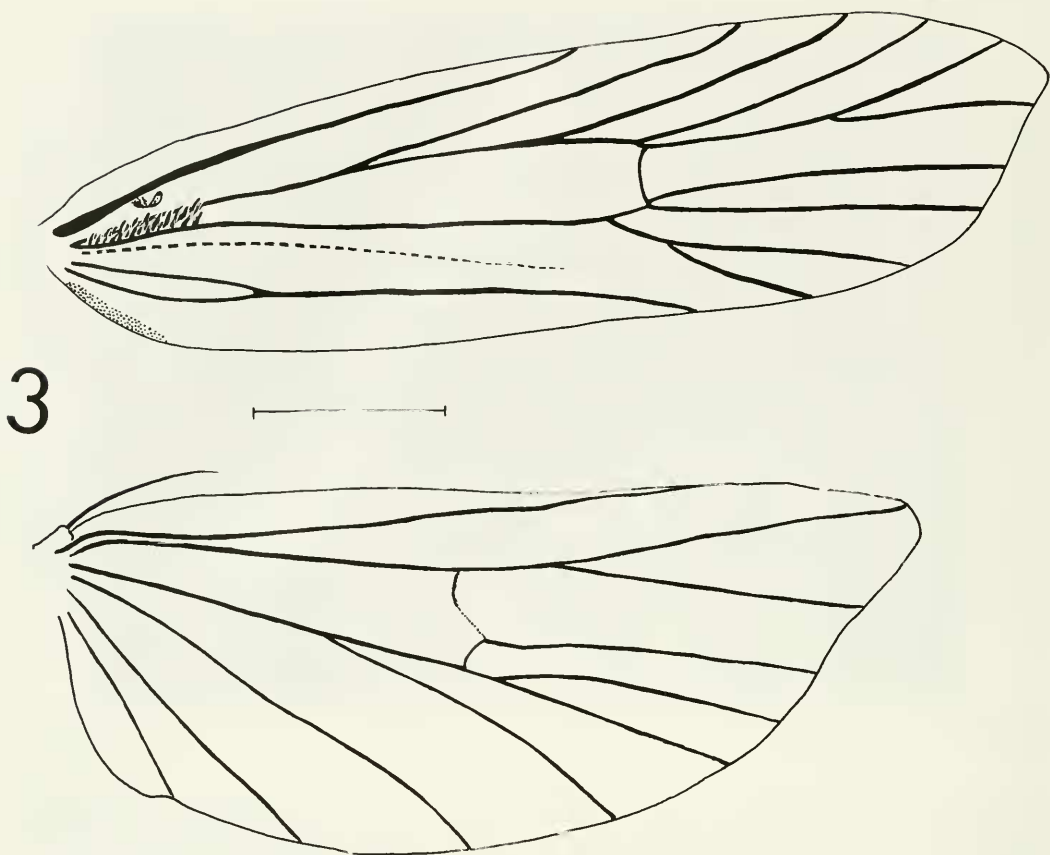


Fig. 3. Wing venation of *Glyphidocera wrightorum*. Scale line = 1.0 mm.

with several elongate spines directed ventrally; distal half of valva lobelike, with many hairlike setae; sacculus recurved basally; vinculum ventrally narrow; juxta basally elongate, widened distally, forming a pair of lateral arms; aedeagus slightly narrowed distally, with an elongate cornutus.

Female genitalia (Fig. 5): Ovipositor somewhat conical-shaped as papillae anales narrow distally; apophyses posteriores narrow; sterigma, a narrow plate fusing with broadened apophyses anteriores, ostium bursae semicircular; antrum and ductus bursae membranous; inception of ductus seminalis slightly posterior to antrum; corpus bursae elongate, membranous, except for a single sclerotization that supports a posterior lobe.

Holotype.—♂, "USA: Ohio: Greene

County, Bath T[ownship]. Wright-Patterson A[ir] F[orce] B[ase], Huffman Prairie, G-4, 39°48.4'N × 84°3.5'W, 14 July, 1995, Eric Metzler, Malaise trap," "♂ Genitalia Slide by D. Adamski, USNM 81650" [green label]. The holotype is deposited in the National Museum of Natural History [USNM], Smithsonian Institution, Washington, D.C., USA.

Paratypes.—10 paratypes: 4♂, same label data as above except, "B-2," "14–26 July, 1995," "♂ Genitalia Slide by D. Adamski, USNM 87680" [green label], "♂ Genitalia Slide by D. Adamski, USNM 87681" [green label], one specimen with dissected genitalia in glycerine vial "A187"; 4♂, same label data as above except, "G-3," "Eric H. Metzler, [collected at light]," "1–8 July 1994," "♂ Genitalia

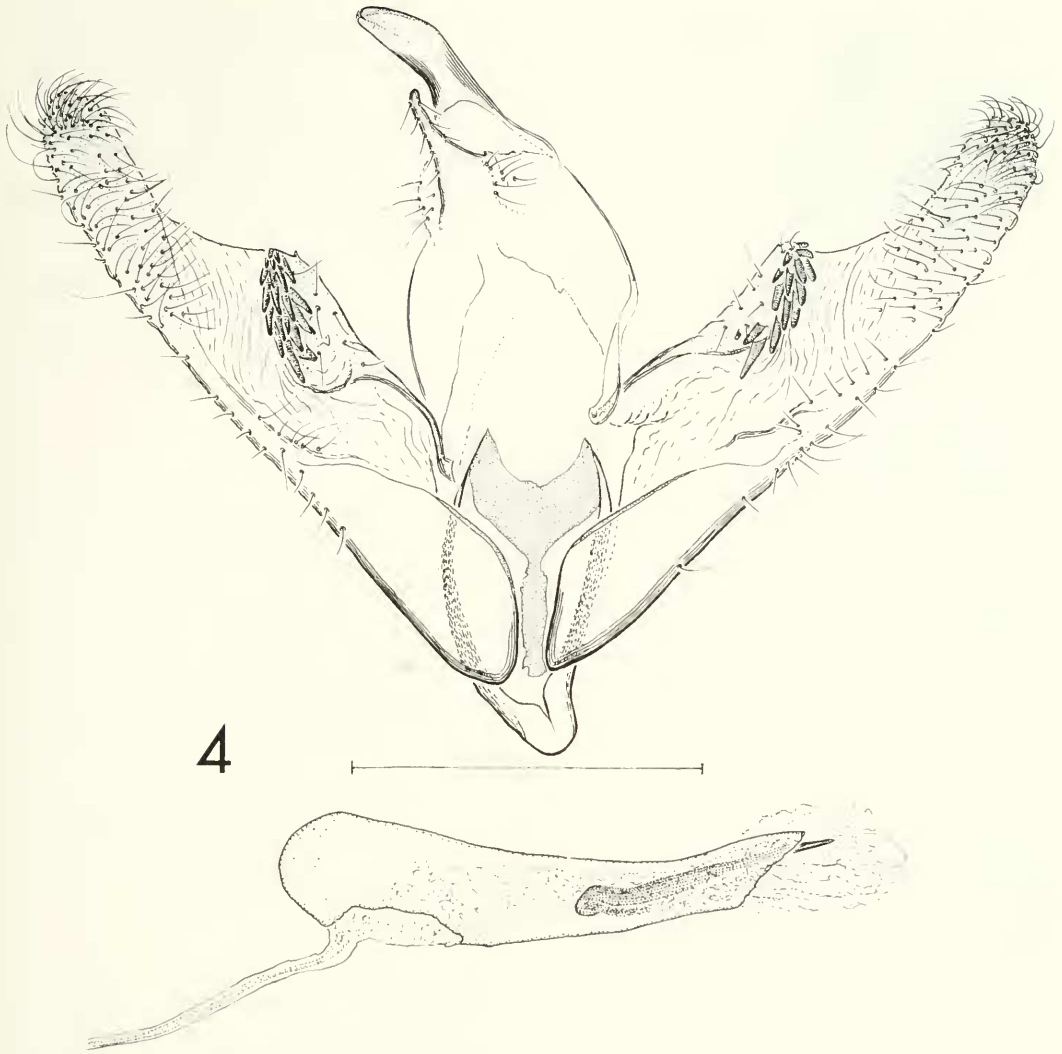


Fig. 4. Male genitalia of *Glyphidocera wrightorum*. Genital capsule above, aedeagus below. Scale line = 0.5 mm.

Slide by D. Adamski, USNM 87679" [green label], "♂ Genitalia Slide by D. Adamski, USNM 87682" [green label], one specimen with dissected genitalia in glycerine vial "A587"; 1♂, same data as above except, "G-5"; 1♂, same data as above except, "8 July 1994," "♂ Wing Slide by D. Adamski, USNM 81649" [green label]. Eight paratypes are deposited in the USNM. Two paratypes are deposited in the Collection of the Ohio Lepidopterists, Ohio State University, Museum of Biological Diversity, Columbus, Ohio, USA.

Biology and distribution.—Host unknown. *Glyphidocera wrightorum* is known only from Huffman Prairie, in southwestern Ohio.

Etymology.—This species is named in honor of Wilbur and Orville Wright. Together, they moved their flight operations to Huffman Prairie in southwestern Ohio about one year after their historic flight in 1903 at Kitty Hawk, North Carolina.

Discussion.—*Glyphidocera wrightorum* is similar in wing pattern to *G. juniperella* Adamski and Brown (1987), but genitali-



Fig. 5. Female genitalia of *Glyphidocera wrightorum*. Scale line = 1.0 mm.

cally appears more similar to *G. dimorphella* Busck (1907). Both species have a narrow gnathal projection, a lobelike distal part of valva, lateral basal projection of valva absent, antrum generally narrow (not broadened laterally), and a simple ductus seminalis (not spiralled). However, *Glyphidocera wrightorum* differs from *G. dimorphella* by the following features: costa spinose, sclerotized on basal half of valva, antrum membranous, posterior lobe on posterior corpus bursae.

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